

For Official
Circulation Only

BULLETIN
FOR FIELD OFFICERS

ISSUED BY THE SECOND SECTION,
GENERAL STAFF, A. E. F.

NUMBER 6

NOVEMBER 8, 1918

CAPTURED GERMAN DOCUMENTS

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Report Documentation Page			Form Approved OMB No. 0704-0188		
Public reporting burden for the collection of information is estimated to average 1 hour per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Washington Headquarters Services, Directorate for Information Operations and Reports, 1215 Jefferson Davis Highway, Suite 1204, Arlington VA 22202-4302. Respondents should be aware that notwithstanding any other provision of law, no person shall be subject to a penalty for failing to comply with a collection of information if it does not display a currently valid OMB control number.					
1. REPORT DATE 1939		2. REPORT TYPE		3. DATES COVERED -	
4. TITLE AND SUBTITLE Bulletin for field officers.				5a. CONTRACT NUMBER	
				5b. GRANT NUMBER	
				5c. PROGRAM ELEMENT NUMBER	
6. AUTHOR(S)				5d. PROJECT NUMBER	
				5e. TASK NUMBER	
				5f. WORK UNIT NUMBER	
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) Army Command & General Staff College, Combined Arms Research Library, 250 Gibbon Avenue, Fort Leavenworth, KS, 66027-2314				8. PERFORMING ORGANIZATION REPORT NUMBER	
9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES)				10. SPONSOR/MONITOR'S ACRONYM(S)	
				11. SPONSOR/MONITOR'S REPORT NUMBER(S)	
12. DISTRIBUTION/AVAILABILITY STATEMENT Approved for public release; distribution unlimited					
13. SUPPLEMENTARY NOTES					
14. ABSTRACT One of over 200 pamphlets from various sources concerning the participation of the U.S. Army in World War I. This item includes translations of captured German documents. This is Bulletin #6. Oversized map not included in digital format.					
15. SUBJECT TERMS					
16. SECURITY CLASSIFICATION OF:			17. LIMITATION OF ABSTRACT	18. NUMBER OF PAGES 8	19a. NAME OF RESPONSIBLE PERSON
a. REPORT unclassified	b. ABSTRACT unclassified	c. THIS PAGE unclassified			

DEFENSE AGAINST TANKS

(TRANSLATION OF A CAPTURED GERMAN DOCUMENT)

225TH INFANTRY DIVISION,
IA, No. 5200

SEPTEMBER 3, 1918.

Pursuant to the dispositions made by General Headquarters concerning the experiences in the last defensive engagements, the following main points for anti-tank operations are set forth. Regimental battalion, and company and battery commanders are enjoined to give their respective troops thorough instruction on these points:

A. IN GENERAL

The infantry must be insistently instructed that enemy tanks in themselves have no fighting powers whatever, and that their shooting is inaccurate; their effect is principally a moral effect. Experience has shown that infantry on its own initiative, with the means it has at hand (rifle, machine gun, anti-tank rifle, several hand grenades tied together, light minenwerfer with flat trajectory), is amply able to bring tank attacks to a standstill and to break them up. Wherever the infantry has kept its nerve, has allowed the tanks to come within 80 or 100 meters, and has then released a well-directed fire, one tank after another has been destroyed with the general help of all the weapons in the hands of the infantry. Opening fire too early only enables the tank to shift its course in time, or set its crew out with a machine gun, which then becomes an enemy machine-gun nest. When fire is opened too early by our infantry, shortage of ammunition is likely to occur. Nevertheless it has happened, and will always happen now and then, that tanks have, with the aid of artificial fog, etc., by surprise pierced our front lines in several places, without having immediately been put out of action, in spite of the opposition of infantry and machine guns.

The farther they push forward into our lines, however, the more surely do they become a prey to our deeply organized defenses, namely, artillery (direct fire), trench mortars with flat trajectory, machine guns (armor-piercing ammunition), anti-tank rifles, and infantry rifles with armor-piercing ammunition, and the less are they able to do any harm to our infantry. The confidence of the infantry in its own weapons and in the sure effect of the means established in the rear for combatting tanks must be strengthened. The sure effect of these means has lately been almost daily mentioned in the summaries of information from General Headquarters. We must strive with all emphasis to stamp out the feeling on the part of the infantry that they are surrounded as soon as enemy tanks have broken through their lines. This feeling is entirely unjustified. These tanks are

cut off just the same as, for example, machine-gun crews that have been stopped in our rear by tanks (as has often happened); they are either destroyed by our fire or put out of action by our prompt counter attack. But so much the more is it absolutely essential that the infantry maintain the sharpest observation toward the front, in order to recognize in time and to bring under destructive fire the enemy that may be dangerous to us—the enemy infantry—which either follows close behind the tanks or else after a considerable interval.

B. THE BEHAVIOR OF THE INFANTRY AND MEASURES TO BE TAKEN FOR COMBATING ENEMY TANKS

1. *The infantry combats tanks at close range*—100 meters at most—with armor-piercing ammunition, and at still closer range with hand grenade balls (two hand grenade heads bound with wire to another hand grenade) by throwing the latter on the caterpillar chains or against the perpendicular surfaces of the tank. Hand-grenade balls will be copiously placed along the line of main resistance (*Hauptwiderstandslinie*) which is especially exposed to tank attacks, and in the rear areas (along lines, in machine-gun-nests). Single hand grenades are without effect. When tanks arrive at our lines in spite of precautions, infantry will give way to either side.

Experience teaches that infantry often opens fire too soon and shoots wild. Hence the principle: Only by *well-aimed fire at close range* can tanks be put out of action. The men must be instructed with pictures exactly at what points the tanks are vulnerable to their weapons.

2. *Measures of a passive nature*.—Tank traps distributed in depth for blocking the Moselle Valley road in question, the Fey-en-Haye—Norroy road, swamping the Trey Valley, blowing up of roads leading out of villages, bridges, laying out mine-fields within the sector, are already under way. The Commander of Pioneers is made responsible for the direction and speedy execution of the work. Maps of the works under construction (passive tank defense) in connection with the active tank defense (Art., M. G's., T. M's.) will be given to the units.

C. CONCLUSIONS

In all enemy attacks in which tanks are used the enemy infantry remains our principal opponent. Tanks will be attended to by our rear defenses. By reason of their small fighting powers they are unable to execute an encircling movement, or to gain any tactical advantage. Every means must, therefore, be used to raise the confidence of our infantry in our weapons and means of defense. Divisions that have been attacked many times by tanks declare that the infantry, before the first tank attack, considers the tanks as much worse than they really are. The splendid fire effect of our defensive means, which has destroyed one tank after another, has taught them better. Therefore, the men must under no circumstances lose their

nerve upon the first appearance of tanks. Further, when tanks have broken through our positions, these positions must still be defended according to orders; in no case does the breaking through of tanks offer a reason for withdrawal. This must be made thoroughly clear to every infantryman.

(Signed) JUNG.

LESSONS LEARNED IN RECENT ANTI-TANK FIGHTING

(TRANSLATION OF A GERMAN DOCUMENT: FROM FRENCH VTH ARMY BULLETIN, OCTOBER 8, 1918)

VIIITH ARMY GENERAL STAFF
SECTION IA

ARMY HEADQUARTERS,
SEPT. 24, 1918.

No. 322 SEPT. 18.

Not to be taken into the front line trenches

1. TANK ALARM

A wide use is to be made of the megaphone and of the signal of attention by bugle. Wireless: the post must be occupied day and night. Visual signals: bengal flares used up to now are too weak for use in foggy weather. Stacks of fire wood, sprinkled with gasoline, kerosene and other inflammable liquids will be lighted at particularly suitable points. Streams of fire will be shot vertically and repeatedly by the flame projectors. Mobile observation systems: motor-cyclists, cyclists, cavalry patrols and telephone shall be used. A large number of megaphones and bugles will be in readiness within the villages.

2. PASSIVE DEFENSE

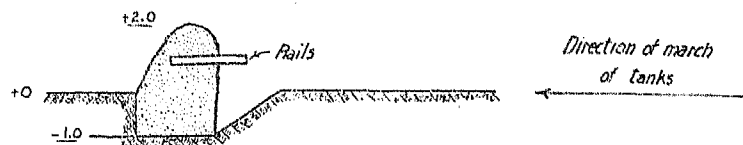
Tank Trenches.

These will be prepared in the lanes through which the tank is obliged to pass, across the entire width of the road (at least five meters) and be well concealed by camouflage; the boarding must be such that only light vehicles, weighing four tons at the most, can cross them. If possible, the ditches are to be filled with water to a depth of two meters as the water stops the motor, or anti-tank mines placed at the bottom with an automatic device for discharging. The routes available for heavy artillery will be clearly marked out.

Anti-tank Barriers.

Permanent barriers which might hinder our own traffic will not be constructed unnecessarily. The new French tanks, small model, are only 1.70 meters wide. Obstacles will consequently be constructed. Care will be taken that the concrete blocks are firmly set; otherwise the tank will displace them. The tank cannot be stopped by blocks less than two meters high. It is advisable that a ditch one meter deep be dug in front of the stopping block in such a way that

it forms an acute angle at the base with the concrete block and that the stopping block be studded with rails or T-irons in the direction from which the tank is expected. (See sketch.)



If barriers are constructed out of agricultural machines it is necessary to join them together with a quantity of iron wire; take advantage of the pointed metal parts, such as harrows, etc., which will catch in the caterpillar tread. These kind of barriers will fulfill their purpose only if constructed on narrow roads to a depth of 10 to 20 meters. Stretched iron wire is useless as the tank rolls over it.

Improvised barriers are made of barricades with various handy material or of stopping blocks formed out of tree-trunks imbedded in the ground and covered with earth or stone.

A vehicle placed across the road can only stop the tank if of large size and loaded with stone. Small ordinary vehicles are not sufficient.

All barriers can stop the progress of the tank for a longer or shorter period only; they cannot stop it definitely nor destroy it. For this reason the system of passive defenses will be complemented by particularly active defensive methods.

3. ACTIVE DEFENSE

The effect of *S* ammunition is nil; that of *K* ammunition (armor-piercing) against tanks of new model is doubtful. The bullet of the anti-tank rifle passes through the present armor plate at a maximum distance of 500 meters; it is necessary, therefore, to let the tanks approach. Groups of anti-tank rifles will be formed; these weapons will be entrusted only to experienced and cool-headed riflemen.

Bomb-throwers will be counted on only for chance hits in very vulnerable parts of the tank.

Light trench mortars pierce the armor-plate; special soft-nosed projectiles have just been introduced. In order to diminish dispersion, the firing is to be done from the platform as much as possible.

Guns are the greatest enemies of tanks. Good results are obtained with the field gun model /96 using brass cartridge case. Up to 1500 meters every artillery projectile is effective; for distances over 1500 meters soft-nosed projectiles will be used. On account of its low rate of fire the field model /16 is less suitable. Steel cartridge cases are not satisfactory as they jam too frequently.

Excellent results are obtained with flame projectors by directing the fire on the loop-holes. This weapon is particularly suitable for the defense of villages. The crew awaits the tank under cover behind the houses, etc. One army proposes, when the terrain is provided with good points for observation, to group all the means for active defense in such a way as to form anti-tank redoubts. All the means for active defense are collected there under the sole command of an energetic officer, all men being resolved to hold out to the last and to destroy all the tanks coming within range. The composition of such redoubts would be: one or two guns, one or two light trench mortars, two machine guns, three or four anti-tank rifles, one or two flame projectors; obstacles will be constructed around the group.

The tanks are always followed by hostile infantry and often by cavalry.

The main point to be observed in defense is that nobody lose his head and that every unit be held firmly in hand by an energetic leader.

GERMAN ESTIMATE OF TANKS

(FROM SUMMARY OF INTELLIGENCE, 3D ARMY CORPS, A.E.F.,

OCTOBER 12-13, 1918.)

*Comment by German Officers of the 40th Infantry Regiment,
28th Division.*

The German Army underestimated the value of tanks, and therefore when we have needed them there have been none available. The first tanks introduced by the British earlier in the war were so heavily constructed and so slow in movement that from our point of view they were practically valueless. For these reasons, the German Government considered the employment and construction of tanks of no advantage, but in the course of time the British steadily improved on their original machines until they now are in possession of an extremely effective weapon against which we have an inadequate defense consisting merely of light field guns which at best are impracticable. It has taken us a long time to realize what powerful weapons tanks really are, so that now, when it is probably too late, we are attempting to bring up to the line machines that measure up to the British standard but which in actual practice are far below it. The failure of our own original tanks was excused by the phrase "Only those troops who have lost their nerve need the support of tanks", and having persuaded ourselves that this was true we made no further use of our clumsy constructions.

ORGANIZATION OF REGIMENTAL MINENWERFER COMPANIES—THEIR USE TO COMBAT TANKS

(TRANSLATION OF GERMAN DOCUMENTS: FROM FRENCH VTH ARMY SUMMARY, OCTOBER 11, 1918.)

I. ORGANIZATION

It is apparent from various signs that the German command found that divisional M. W. companies do not meet the needs of the present warfare, and with a view to releasing men for infantry service has decided to abolish divisional M. W. companies and form regimental companies.

From a captured German document of August 17th it is evident that this reorganization is based on the following principles:

- 1st. Assignment of the personnel from the divisional companies among the regimental companies.
- 2d. Using the existing resources of the infantry M. W. detachments for the formation of regimental companies.
- 3d. Giving the men left over, after forming the regimental companies, to the infantry.

II. USE OF M. W. TO COMBAT TANKS

It seems that besides the idea of ameliorating the deficiency in the infantry personnel, the German high command in forming these regimental M. W. companies has had in mind forming special units to counter a means of combat that is giving it more and more anxiety.

An order of Ludendorff dated August 7, 1918, is quoted:

"In order to effectively combat tanks the greatest importance must be attached to the instruction of the personnel in the use of light M. W. with flat trajectories and anti-tank rifles.

More than one soldier of the gallant M. W. forces will regret seeing the divisional companies dissolved; however, I am sure that every one familiar with the tactical conditions which make this change imperative will rejoice in seeing the beginning of a more intimate union with the infantry. The fight against tanks, which is assuming an extraordinary importance, becomes the first consideration of M. W. units."

The following armament is given to regimental M. W. companies:

- 2 medium M. W.
- 9 light M. W.
- 9 anti-tank rifles.

The medium M. W. are exclusively intended for position warfare and defensive warfare. All the light M. W. must be provided with flat trajectory carriages.

The men should have practice in firing light M. W. against wooden

tanks at distances of from 200 to 300 meters. Practice firing should also be conducted with medium and heavy M. W. upon the lanes through which tanks must follow.

THE CAUSES OF THE DEFEAT OF THE II^d GERMAN ARMY

(TRANSLATION OF GERMAN DOCUMENT FROM FRENCH IVTH ARMY BULLETIN, OCTOBER 11, 1918.)

CHIEF OF THE GENERAL STAFF OF
THE FIELD ARMY.

G.H.Q., AUGUST 11, 1918.

IA/II No. 9757.

SECRET OP.

According to the reports of the officers sent by the High Command into the zone of battle of the II^d Army, the defeat of this army is due to the following facts:

1. The troops allowed themselves to be taken by surprise by attacks of tanks in large numbers, and above all, lost all discipline when tanks, which had succeeded in breaking through owing to a natural or artificial fog, appeared suddenly behind them.
2. The advanced zone of combat as well as the positions and sectors more in the rear had neither positions nor supplementary defenses sufficient to offer a methodical resistance.
3. Battalions in reserve and the reserves of larger units did not have enough artillery immediately available to enable them to oppose additional artillery resistance against the enemy and tanks which had broken through.

The following is therefore necessary:

1. As I have already prescribed in my order Ia No. 9718, secret, op., August 8, it is necessary to take more care than before to find out the disposition of the enemy by taking prisoners, by watching the terrain from special observatories of the centers of information, by aerial reconnaissance, by listening posts, etc. In the present situation we must expect surprise attacks in other sectors of the front.

The greatest vigilance is necessary at day break and during the early hours of the morning, as surprise attacks are generally started at this time, for the tension of the night produces a certain relaxation of the nerves and strength of the men. Recent experience has proved that an inspection of the troops at this time is particularly necessary.

Sufficient emphasis has already been given to the subject of the arrangement in depth, of infantry and artillery.

2. In the construction of positions still greater importance must

be attached to the defense against tanks and the troops' dislike of digging should be overcome in every way possible.

If in certain places in the advanced zone, in an active sector and before a vigilant enemy, the organization of trenches and the siting of supplementary defensive positions is of necessity a slow operation, commanding officers must, nevertheless, see to it that the infantry digs itself in quickly, and protects itself by supplementary defenses, so small works concealed from view will change little by little into continuous elements and finally into lines.

But it is absolutely necessary that work should go ahead more rapidly on the terrain further back, which is not altogether under fire of the enemy artillery. Above all attention must be paid to the construction of points of support mutually flanking each other, in organizing with networks of wire entanglements for a determined defense, of villages, farms, woods, and roads, and establishing anti-tank defenses. Even in rear positions continuity must be sought for (fire support, visual communication etc.). It is beyond all reason to assume that tanks, having penetrated advanced positions without meeting either obstacles or resistance, should be able to continue several kilometers on the roads or alongside of them, right up to divisional headquarters.

3. The idea that troops even though surrounded should, in default of other orders, defend their battle sector to the very last man and to the very last cartridge, seems to have been entirely forgotten. The enemy who executes an encircling movement is himself turned, and all parts of a break through must be closed.

Our men are not justified in falling back when single tanks and cavalry detachments break through. They will be put out of action by skilful tactics of the reserves.

4. A large number of our troops fight badly against tanks. Instruction on this subject should be pushed.

a. A tank falls an easy prey to artillery of all calibres. The first thing necessary is that part of the Field Artillery shall not be in fortified emplacements, which latter makes the use of each gun in any direction impossible. It should be placed in such a position that it can assist in repulsing a tank attack as well as a cavalry attack, that is to say, in the open or on the edge of woods with a ground observation station near by. The remaining artillery elements should also be disposed in such a manner that their guns may defend themselves against the tanks.

In addition single guns should be taken several kilometers behind the principal line of resistance, to such points as are particularly important, the entrance to villages, etc. The duty of these guns is to put out of action quickly and at short range such tanks as may have broken through. Opening fire prematurely warns the tank.

Detachments of cavalry who are ordered to lead and protect tanks should be disposed of by machine-guns. Battalions in close reserve will have assigned to them guns or sections of guns to combat the enemy assault artillery. In addition mounted batteries will be assigned to battalions in reserve. Mounted batteries belong in principle to the reserves of the Higher Command.

b. Trench mortars give the same results. Their lack of precision demands fire at short range.

c. Tanks are only dangerous to the infantry at a very close range, (less than 100 meters) because of the lack of accuracy of their fire. At short distances good results can be obtained with the anti-tank guns, with machine guns and with concentrated charges, even against heavily armored tanks.

In addition, infantry will get out of the way to permit the fire of the artillery and of the trench mortars, and will take up the fight against the enemy infantry, which generally follows quite a distance behind the tanks. The use of machine guns against tanks at long range is forbidden; it is useless and wastes ammunition.

d. Finally do not forget *passive defenses*, barricades, trenches, destruction of bridges and of roads, placing of fougasses and contact mines. Even if these defenses are broken down, or crossed by the tanks, they will nevertheless delay them and make our work of defense easier. The greatest encouragement should be given to the active and inventive genius of subalterns in the construction of these works.

5. While the number of clerks and draftsmen in the higher staffs is being cut down, the life and activity of fighting units should nevertheless remain known to commanders. A better feeling will result between troops and their officers if the commanding officer allows subordinates to make suggestions concerning the work of organizing defenses and conduct of battle and if he himself pays attention to the progress of the work. The High Command should not concern itself with minor details. Relations between troops and its staff can never be too intimate. Mutual understanding and confidence should exist and surprises will be avoided.

I order that orders already given on this subject shall be looked up and whenever necessary, new ones be given. G.H.Q. will send officers to the staffs of armies, army corps and fighting units for the purpose of helping carry out these directions in the work of the army.

By order: (Signed) LUDENDORFF.

COMMENTS

ST. MIHIEL OFFENSIVE

In our last account of operations on the Western Front (pamphlet No. 3 "Lessons Taught by the Attack of March 31st") we dealt with the beginning of the great offensive which the British Army has succeeded in maintaining from the beginning of August down to the present date. It is already clear that this operation will rank as one of the outstanding features of the war. For sustained vigor, for the great material and mechanical means employed, for its decisive influence on the German army in France, its importance can hardly be exaggerated. And American divisions have shown up to great advantage in fighting among the British. But for the moment we have not the space at our disposal to give adequate account of these events and must come rapidly to what concerns more immediately the American Army viewed as a whole.

For behind the working out of the striking operations of the last three months on the front, we must not lose sight of the fact that behind the line of battle a military event was occurring of quite as much significance as the combats themselves. This was the formation of the American Army. However great a part our troops and our command may have played during the critical moment when the tide turned in July, we were then still playing an undeveloped part in the war,—merely helping our allies with a division here and a division there. Since then, week by week, through the height of the struggle, determined policy and hard work were rapidly aggregating our divisions into what became about the middle or the close of August the First American Army.

Without discussing the reasons for this, it had long been arranged that when formed our armies should operate on that part of the front which may roughly be described as lying to the east of the Argonne. In that direction were some outstanding features: the ancient fortress of Verdun, the scene of the terrific fighting of 1916; the remarkable salient of St. Mihiel, one of the strong points of the German line in France; and just back of the German line the Briey fields which have been one of the great factors in the conduct of operations and just by them Metz, the great advance concentration point which Germany for a generation past had held like the point of a sword towards Paris. It was natural that it should have been in this direction that those responsible for the handling of our First Army should have looked.

The German position at St. Mihiel presented a remarkable combination of natural and military features.

The Cotes de Meuse, bordering that river on the east, form a striking chain of hills rising about 450 feet very sharply from the Meuse valley to the west and the Woëvres on the east. The hills are

heavily wooded and deeply cut by ravines in all directions; in other words what with good drainage and dense underbrush they are admirably adapted for defense in trench warfare. The German positions stretched from a conical hill just south of St. Mihiel, the Camp des Romans, right along the Cotes for about 20 kms. northward at which point they descended northeasterly into the lowlands. St. Mihiel itself lay at the bottom of a natural cup and suffered throughout comparatively little damage save from aerial bombardment. The Woëvres is the natural counterpart of the chain of hills,—an ill drained lowland full of marshes and ponds, ill adapted to defensive works, and indeed to any form of military operations. Immediately east of St. Mihiel, however, a projecting spur of hills reduced the width of this district to only a few kilometers of bad ground beyond which, still moving about due east, one reached the next rise of hills, bordering on the Moselle. From St. Mihiel to the Moselle is about 30 kms.; rather more than one-half of this distance is difficult ground, but roughly about midway a fairly good front could be found where troops could be handled in the attack and where defensive positions were not too strong. This part of the southern face of the salient was therefore clearly indicated as a point of attack.

Coming now to the lines of communication within the salient, the map indicated in the clearest possible way that an attack from the south face should be aimed at reaching Thiaucourt extending as far to the west as possible in the direction of Vigneulles. These two points were the knots of roads controlling the apex of the salient some 12 or 15 kilometers southeasterly towards St. Mihiel. Assuming a reasonable degree of success it was apparent, however, that Thiaucourt could be more easily reached than Vigneulles, while the main road St. Mihiel-Vigneulles would give the Germans a sufficient means for withdrawing their troops if left uninterrupted long enough. The question therefore arose whether it might not be possible to force the northern end of the German position across the Cotes de Meuse and to break through along the hills southeasterly some 13,000 yards from near Les Eparges to Vigneulles. In this way the chances of cutting the main German line of communication would be doubled.

It could not, of course, have been foreseen at the time when the operation was planned whether or not the German command would decide to make a fight for the salient. The general situation gave some indication as to what was probable; and the daily work of the Intelligence Section enabled our High Command to keep the closest sort of check on the enemy's intentions in this regard. Still it was necessary to plan the operation on the basis that a considerable amount of resistance would have to be overcome. It was also of the utmost importance that the line Thiaucourt-Vigneulles should be reached with great rapidity, because every hour that the roads remained open meant that just so many more German troops could be

brought out of the salient. Therefore it was important to use the fullest number of troops that could be usefully employed under any conditions; and it was equally important to surprise the enemy.

The surprise element was most successfully worked, and in more than one way. Suffice it to say that the attack came off about 48 hours before it had been anticipated by the enemy and that our movement on the western face towards Vigneulles was apparently not foreseen at all. Our Staff functioned remarkably well. The attack began along familiar lines on the 12th. At 1 o'clock in the morning an intense artillery preparation was opened, followed soon after dawn by the advance of the infantry. Meanwhile, however, the Germans had become aware of the imminence of the danger and having determined upon withdrawal rather than defense, orders were issued for the movement to take place on the very night selected for our attack; and our artillery preparation came at the worst possible moment for the Germans, upsetting their adjustments for retreat. The enemy at this moment had in position the following divisions: 77th R, 10th, 5th Lw., 192d and part of the 35th A.H.

Under the conditions already noted, and in view of the fact that with one exception the German divisions were third class, a strong resistance was hardly to be expected. The advance of our troops proceeded with great success. The attack on the south face of the salient with seven divisions in line between Richecourt and Fey en Haye, 14 kilometers, reached Thiaucourt and a considerable distance west by the late afternoon. On the western face the Germans offered very little resistance, but on the other hand the ground was so naturally strong and the woods so dense that the advance was less rapid. That evening the progress made left the divisions engaged only about halfway to Vigneulles.

On the 13th, the operation on the southern face consisted in little more than mopping up and closing in on the second German line of defense, a line which ran roughly northwestwards from Pagny on the Moselle at an average distance of from 5 to 10 kms. back of the first line. On the other side, the advance towards Vigneulles was resumed. Our infantry reached the edge of the hills just north of Vigneulles at about half past ten in the morning and Vigneulles itself a few hours later. This marked the final cutting off of the St. Mihiel salient.

The result of the operation as a whole was to straighten the Allied line between the Moselle and the Argonne in such a way as to give a front facing Briey and Metz. It gave our 1st Army an invaluable experience in large troop movements and combined attack. It netted a total of about 15,000 prisoners with over two hundred guns, machine guns and mortars, rolling stock and other materiel.